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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,833	03/14/2001	Yoji Okazaki	699866/0041	4447

7590 09/12/2002

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EXAMINER
NGUYEN, MICHELLE P

ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 09/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/805,833	OKAZAKI, YOJI	
	Examiner	Art Unit	
	Michelle Nguyen	2851	

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,317,348 to Knize in view of U.S. Patent No. 5,796,771 to DenBaars et al.

Knize discloses a color laser display (laser projector system) comprising:

red, green and blue laser light sources (red, green and blue solid-state laser means 30, 40 and 50, respectively) for emitting red, green and blue laser light, respectively (see Col. 3, lines 59-63, Fig. 1);

modulation means (red, green and blue light modulator means 20, 24 and 28) for modulating the red, green and blue laser light based on respective red, green and blue signals (see Col. 3, lines 35-8, Fig. 1);

a screen for displaying red, green and blue when irradiated with the red, green and blue laser light (see Fig. 1); and

projection means (scanner 5) for projecting the red, green and blue laser light onto the screen so that an image carrying the red, green and blue image signals is displayed on the screen (see Col. 3, lines 46-8, Fig. 1).

Although Knize teaches employing a fiber laser unit (fiber laser 49 or 58) having a fiber (glass fiber) with a praseodymium-doped core as at least one of the red, green and blue solid-state laser means 30, 40 and 50, respectively, Knize does not teach the fiber lasers 49 and 58 to have a gallium nitride semiconductor laser element for exciting the glass fiber (see Col. 4, lines 49-58, Col. 5, lines 24-38). However, DenBaars et al. disclose a solid-state laser having a crystal or glass doped with praseodymium, thereby rendering the laser of DenBaars et al. analogous to the laser means of Knize (see Col. 3-6, Col. 4, lines 6-9). DenBaars et al. teach the solid-state laser to employ gallium nitride as the pump source for exciting the crystal or glass, wherein gallium nitride provides the advantage of allowing for the entire visible region of the wavelength spectrum to be pumped (see Col. 2, lines 24-8). Other lasers disclosed by DenBaars et al. include various surface-emitting semiconductor lasers, which also employ gallium nitride as the pump source. In disclosing these lasers, DenBaars et al. discuss several ways of doping an active medium and engineering semiconductor compounds including varying combinations of indium, gallium, aluminum, phosphorous, nitrogen and/or arsenic for producing selected band gap energies corresponding to one or more color light (red, green or blue) to be emitted (see Col. 3, lines 14-46). Since gallium nitride as a pump source allows for the entire visible region of the wavelength spectrum to be pumped, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute for the laser means of Knize any of the lasers of DenBaars et al. for producing red, green and/or blue light.

3. Claims 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knize in view of DenBaars et al. as applied to claim 15 above, and further in view of U.S. Patent No. 5,727,016 to Paxton.

DenBaars et al. do not specify the stripe width of a semiconductor laser element when used as an active medium. However, Paxton discloses a semiconductor laser element for use with a surface-emitting semiconductor laser, thereby rendering the laser element of Paxton analogous to the laser element of DenBaars (see Col. 1, lines 21-2, Col. 2, lines 4-8). Paxton teaches the output from surface emitting semiconductor lasers to be spatially coherent if the width of the lasing region is limited to about 5 microns, but also teaches that increasing the width to at least 50 microns allows for high output power (see Col. 1, lines 27-32, Col. 3, lines 29-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the semiconductor laser element of the combined invention as discussed above with respect to claims 1-23 such that the laser element has a width of 5 microns or more, depending on the desired output of the laser.

Response to Arguments

4. Applicant's arguments filed July 22, 2002 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument in the first full paragraph on Pg. 4, U.S. Patent No. 5,317,348 to Knize discloses a fiber laser comprising glass fiber doped with material such as praseodymium for emitting not only green light but also blue light (see Col. 4, lines 49-58, Col. 5, lines 24-38). Applicant is also directed to the Office action mailed April 18, 2002, where, at the beginning of the first full paragraph on Pg. 3, examiner discusses fiber lasers 49 and 58 for emitting green and blue light, respectively.

In response to applicant's argument in the second full paragraph on Pg. 4, U.S. Patent No. 5,796,771 to DenBaars et al. discloses a laser crystal doped with praseodymium for emitting red, green and blue laser light (see Col. 2, lines 24-8, Col. 3, lines 3-6, Col. 4, lines 6-9). Applicant is also directed to the Office action mailed April 18, 2002, where, at lines 4-6 and 11-13 of the first full paragraph on Pg. 3, examiner discusses a laser crystal doped with praseodymium for use in solid-state lasers which allow for the emission of the entire visible region of the wavelength spectrum (red, green, blue).

With respect to applicant's argument in the third full paragraph on Pg. 4, the purpose of the remarks is unclear.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Nguyen whose telephone number is 703-305-2771. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7723 for regular communications and 703-305-7723 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

mpn
September 10, 2002

RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800